

Title: Optical Crossbar Using Lasing
Semiconductor Optical Amplifiers
Inventors: Sol P. Djaili & Jeffrey D. Walker
Atty. Docket No.: 21153-05920

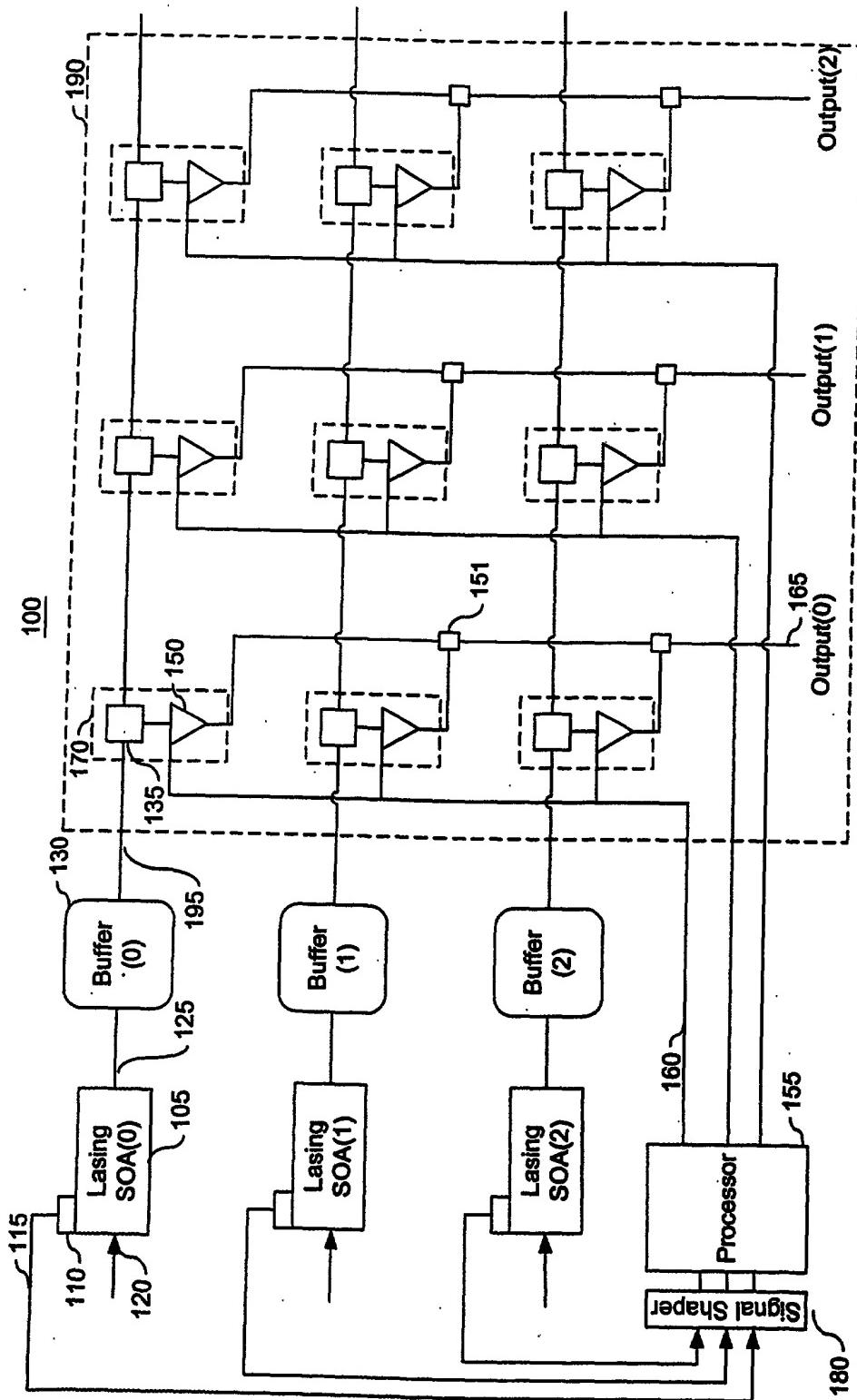


Figure 1

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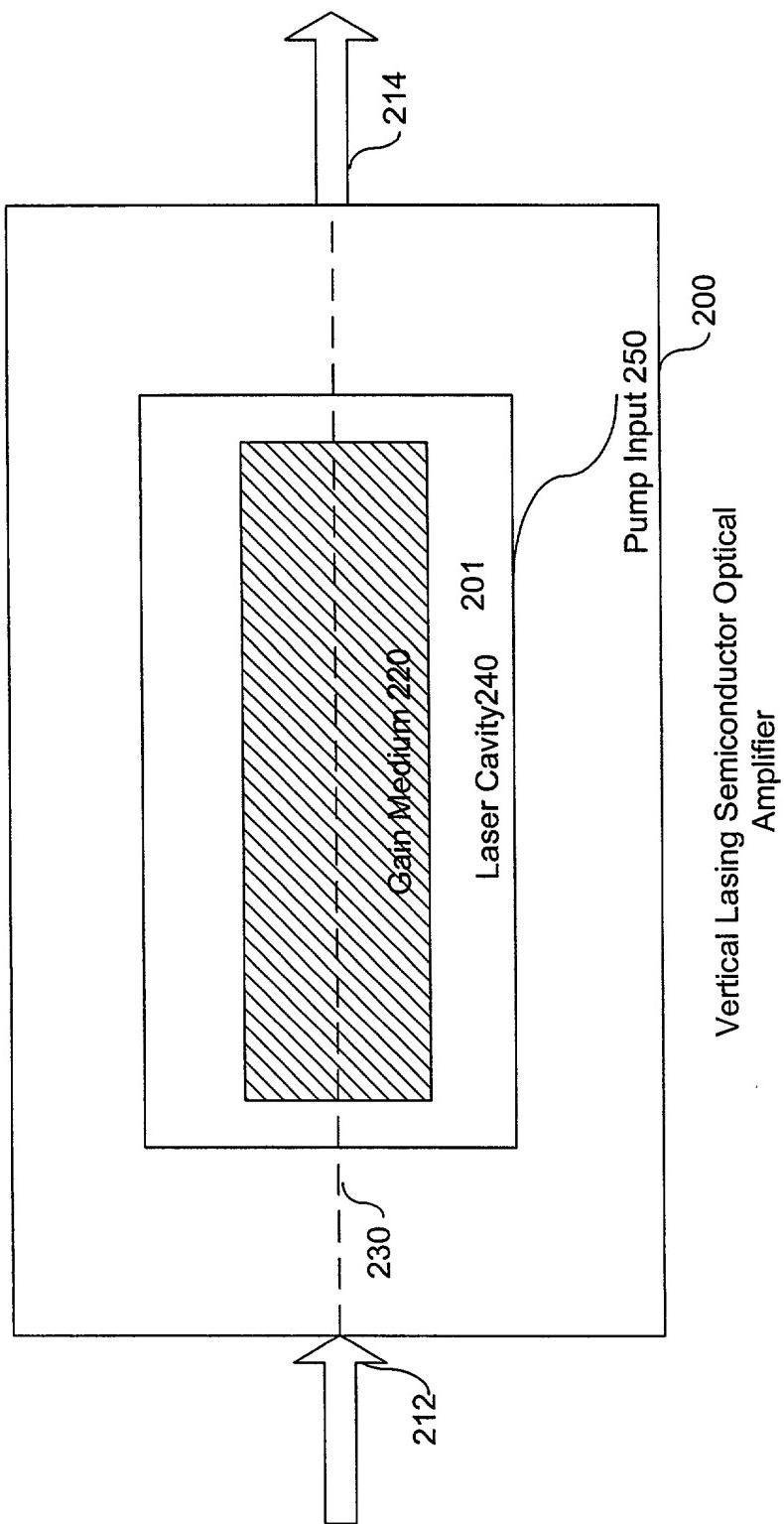


Figure 2

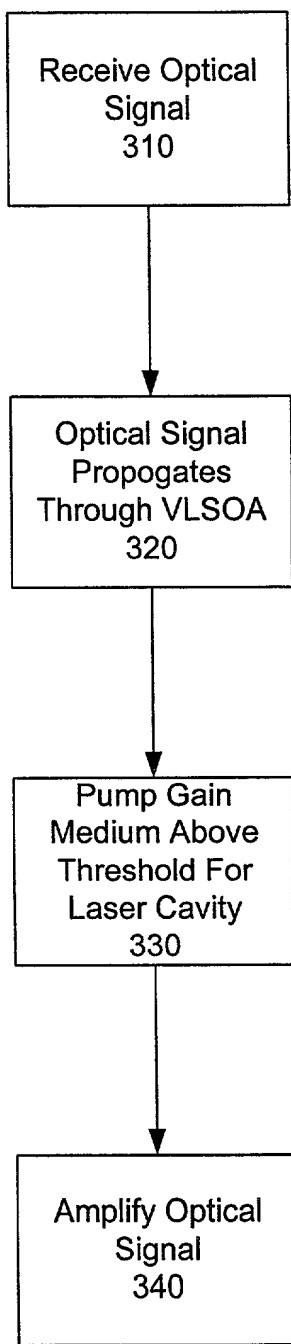
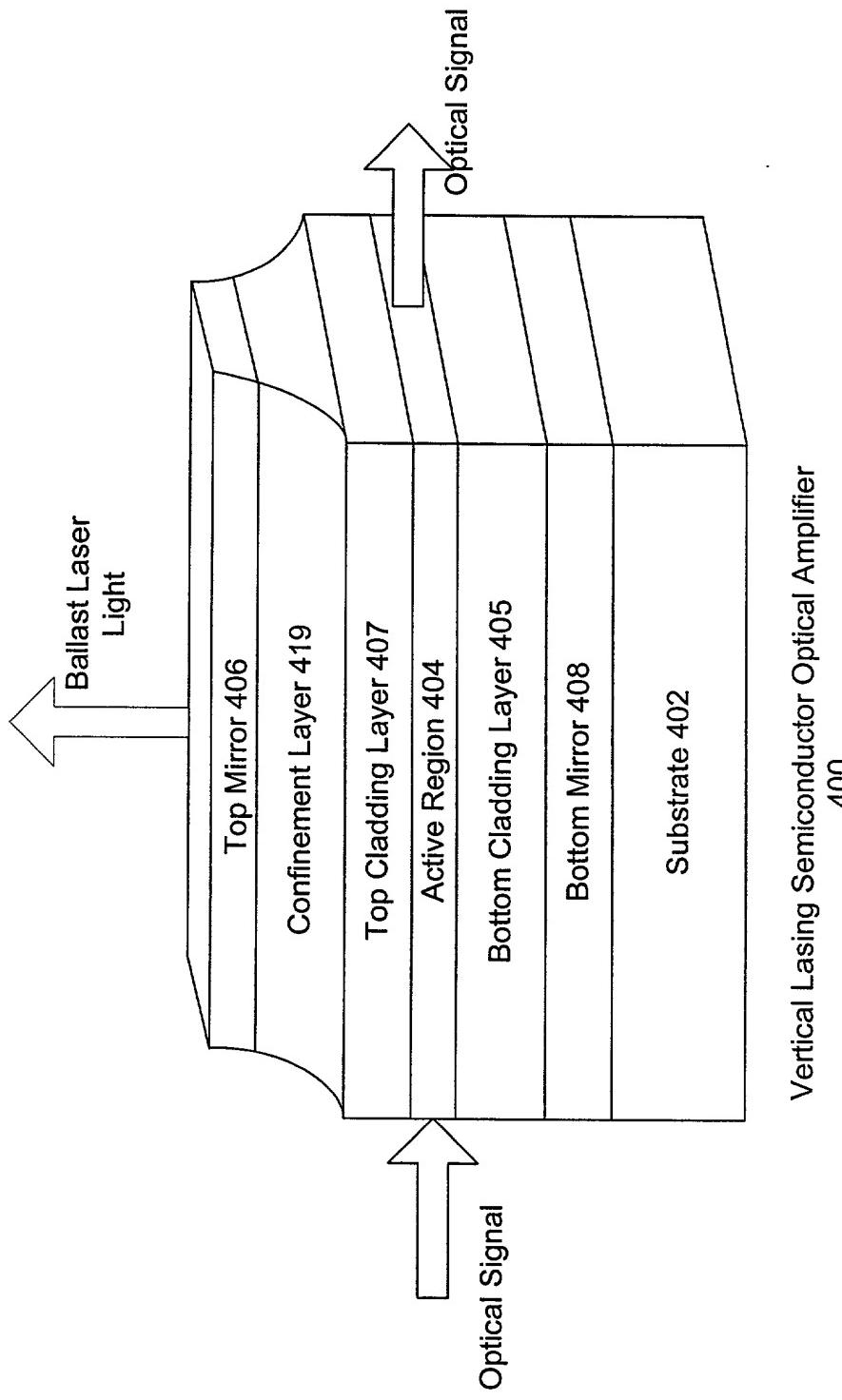


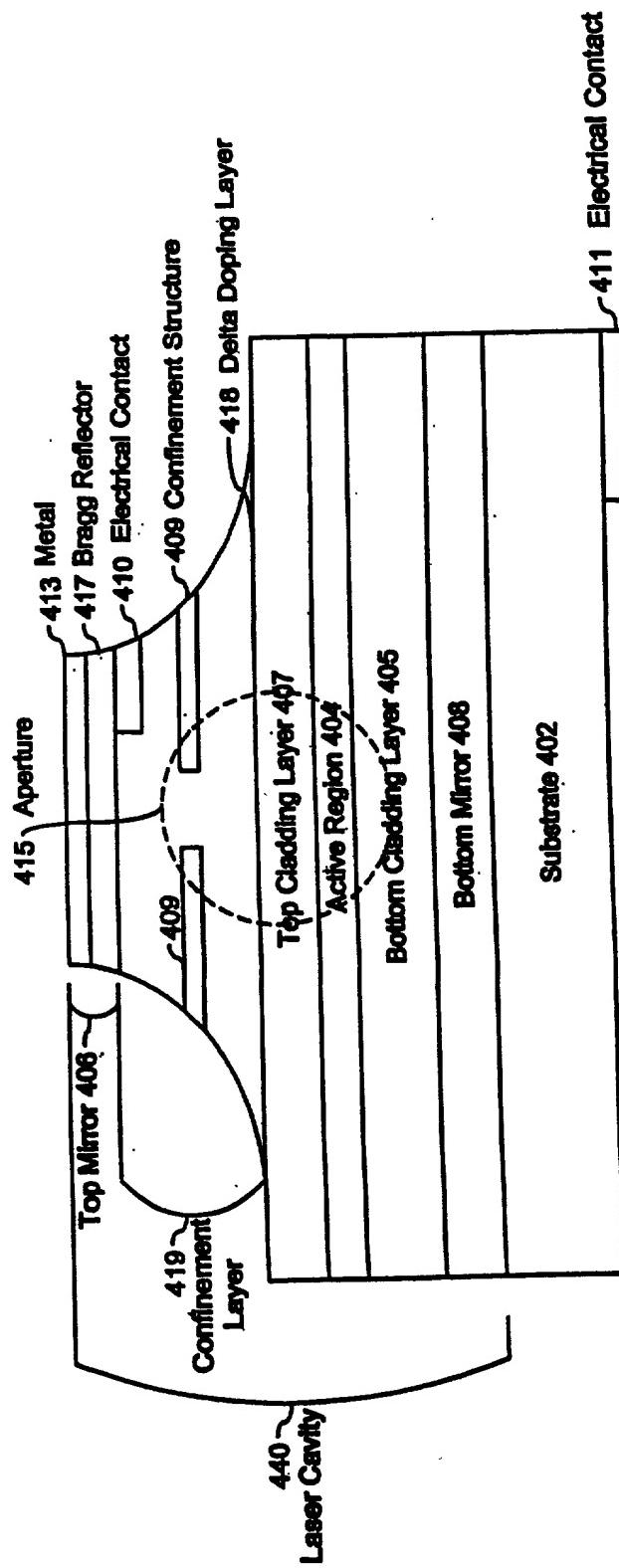
Figure 3

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Vertical Lasing Semiconductor Optical Amplifier
400

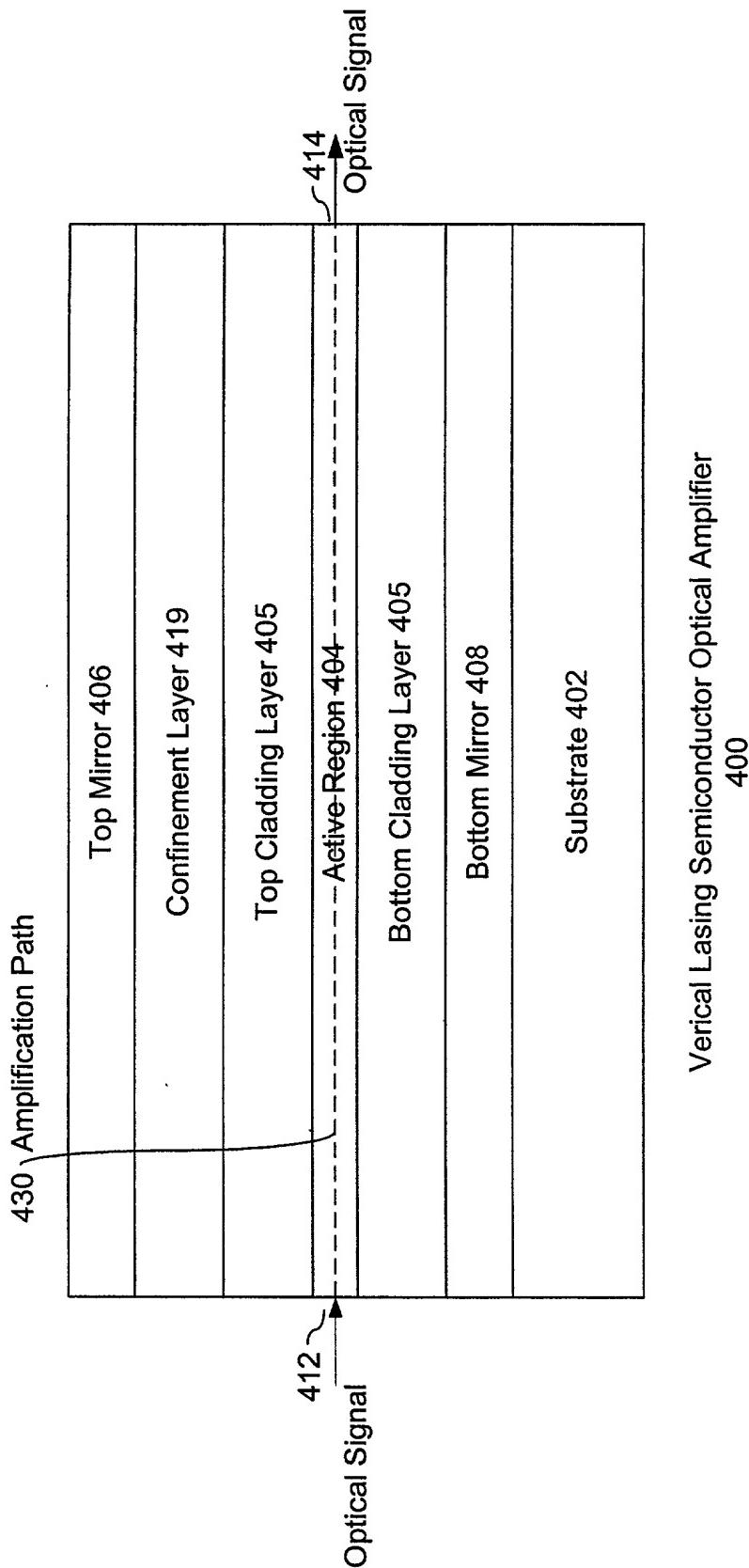
Figure 4A



Vertical Lasing Semiconductor Optical Amplifier 400

Figure 4B

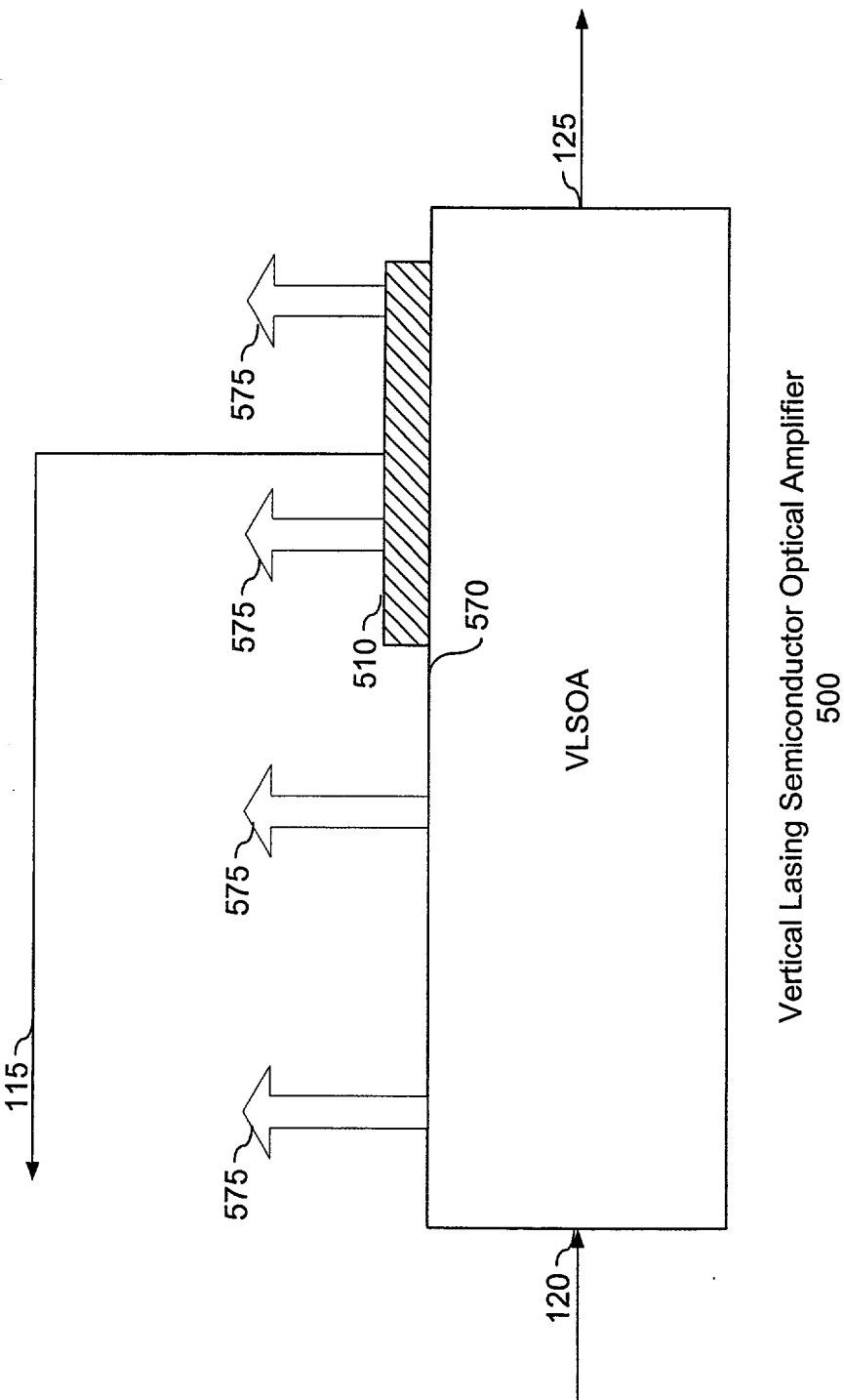
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Vertical Lasing Semiconductor Optical Amplifier
400

Figure 4C

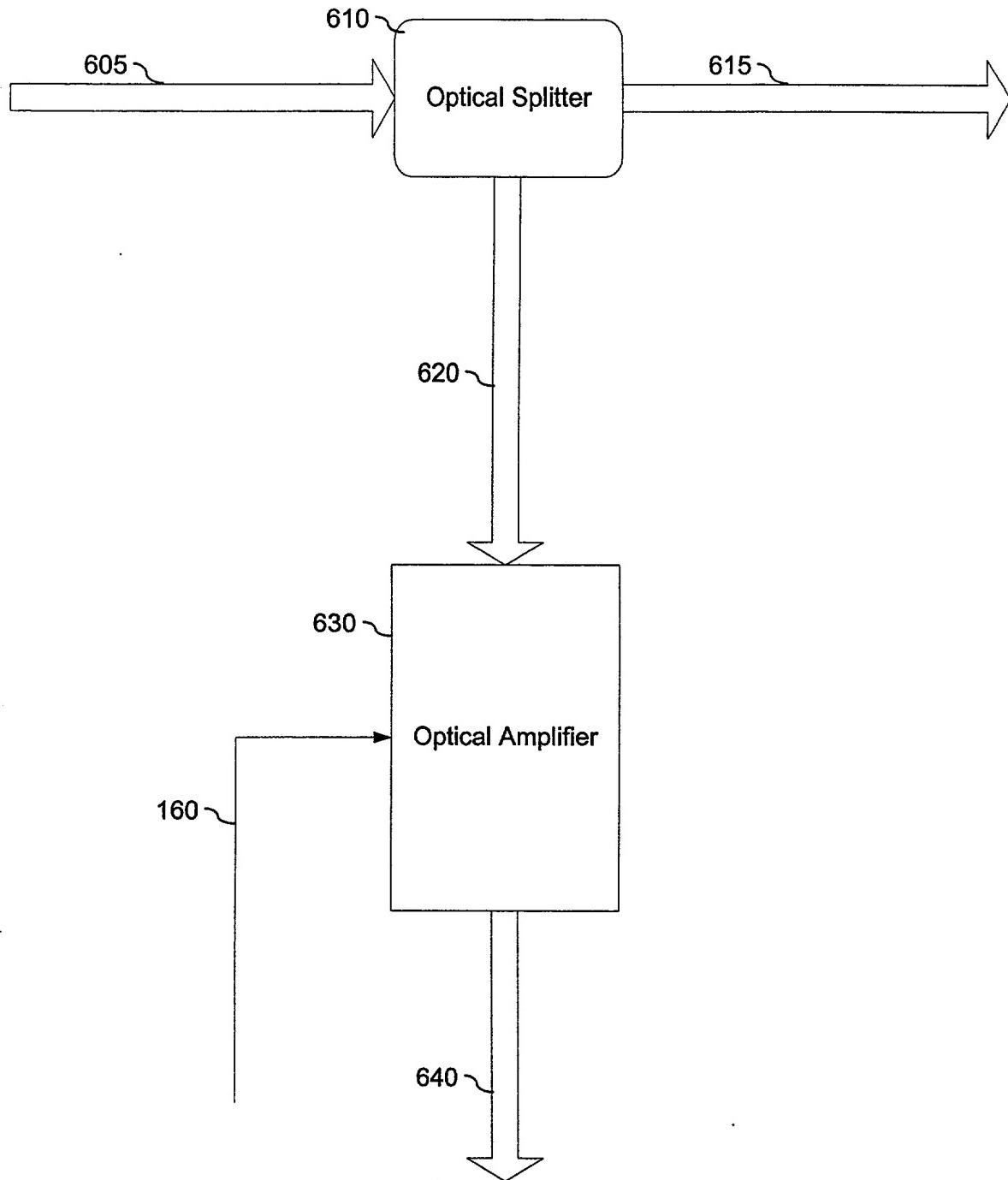
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Vertical Lasing Semiconductor Optical Amplifier
500

Figure 5

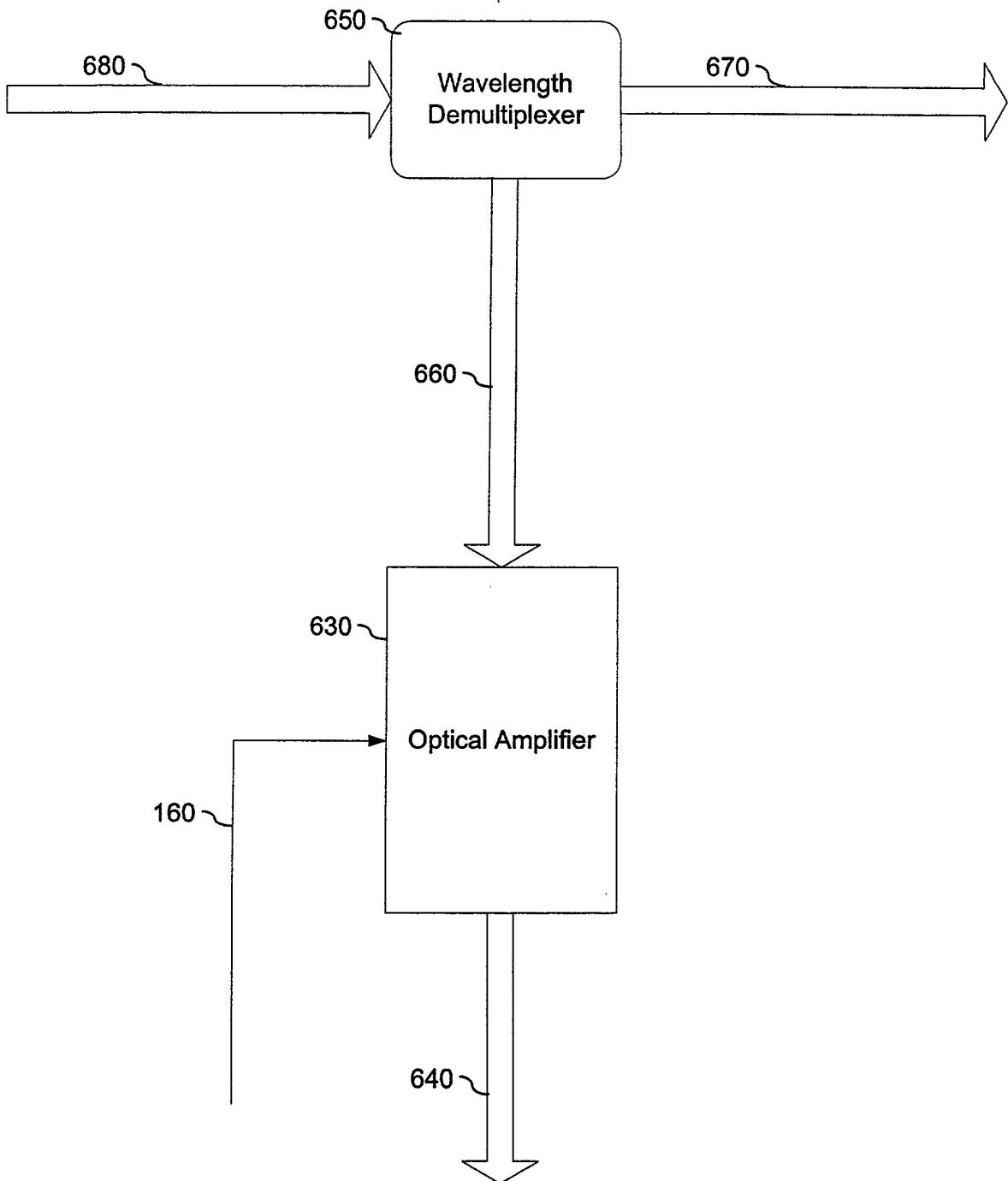
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Optical Routing Node 170

Figure 6A

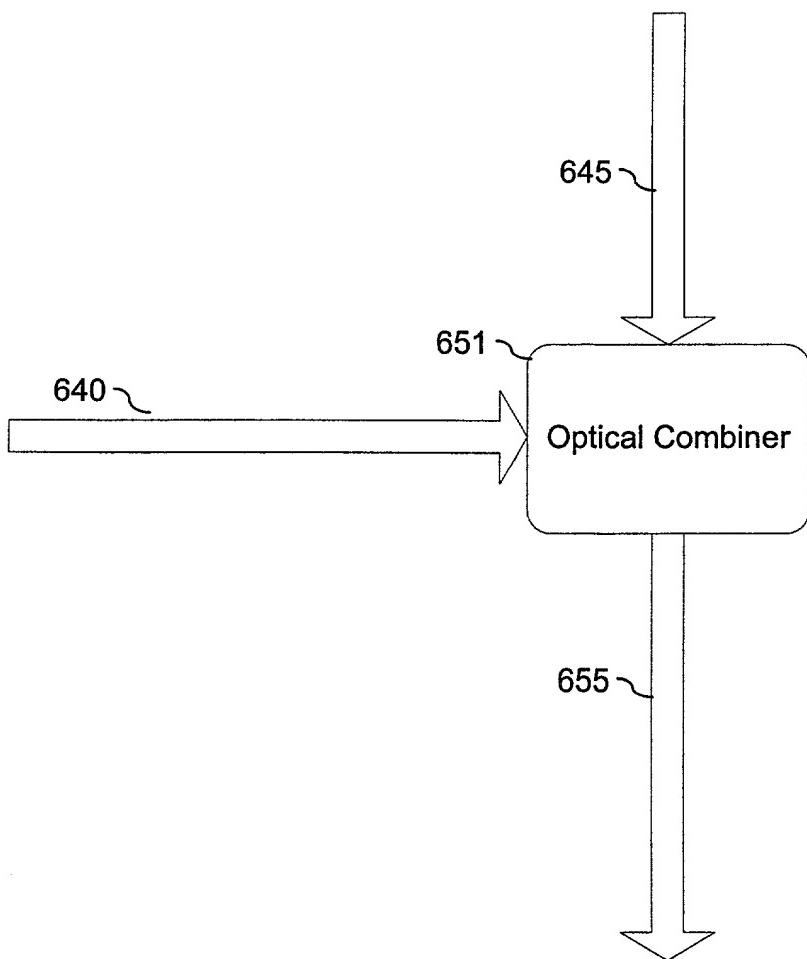
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Optical Routing Node 170

Figure 6B

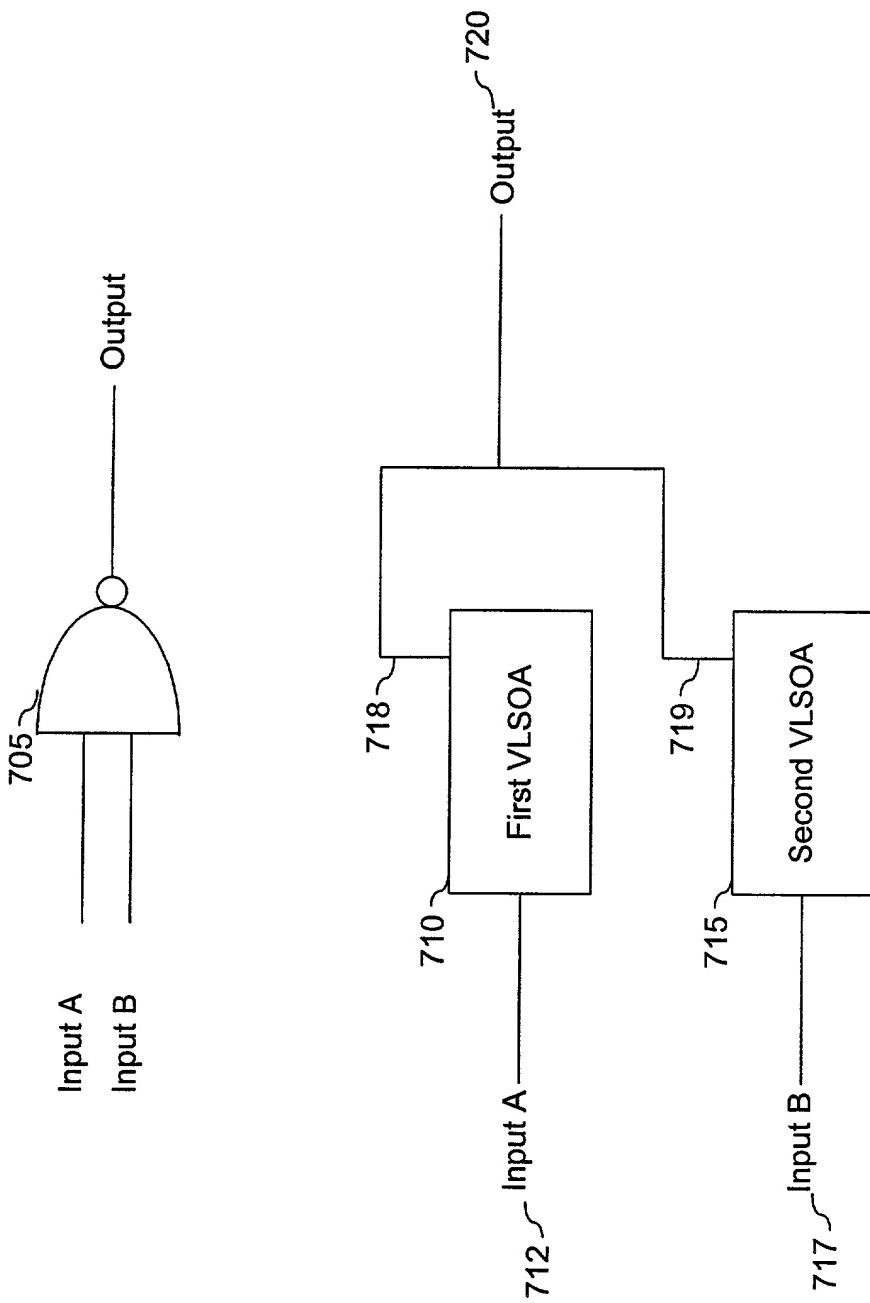
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Optical Combiner 151

Figure 6C

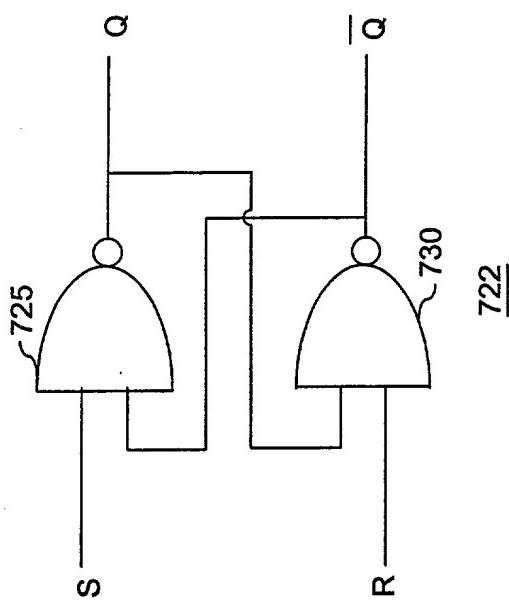
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Optical NAND Gate 700

Figure 7A

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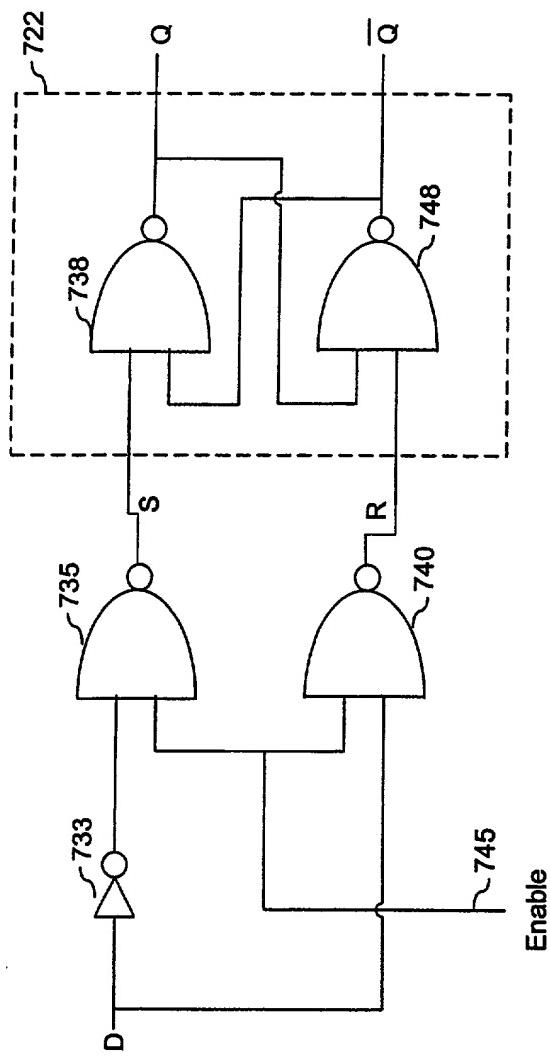


S	R	Q	\bar{Q}	Not Used	Memory State
0	0	1	1		
0	1	0	1		
1	0	1	0		
1	1	0	1	0	

Optical Flip-Flop

Figure 7B

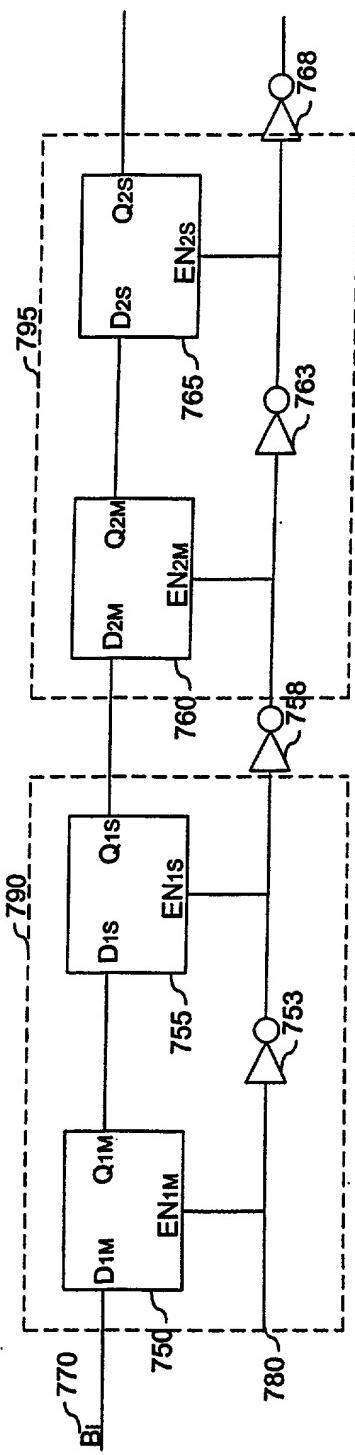
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732

D	Enable	Q	\overline{Q}	Memory State	Memory State
0	0	0	1	0	1
1	0	1	0	1	0
0	1	0	1	0	1
1	1	1	0	1	0

Optical Buffer Element
Figure 7C



775

Control	D1M	Q1M	Q1S	Q2M	Q2S
1	B1	B1			
0		B1	B1		
1	B2	B2	B1	B1	
0		B2	B2	B1	B1

Buffer Array
 Figure 7D

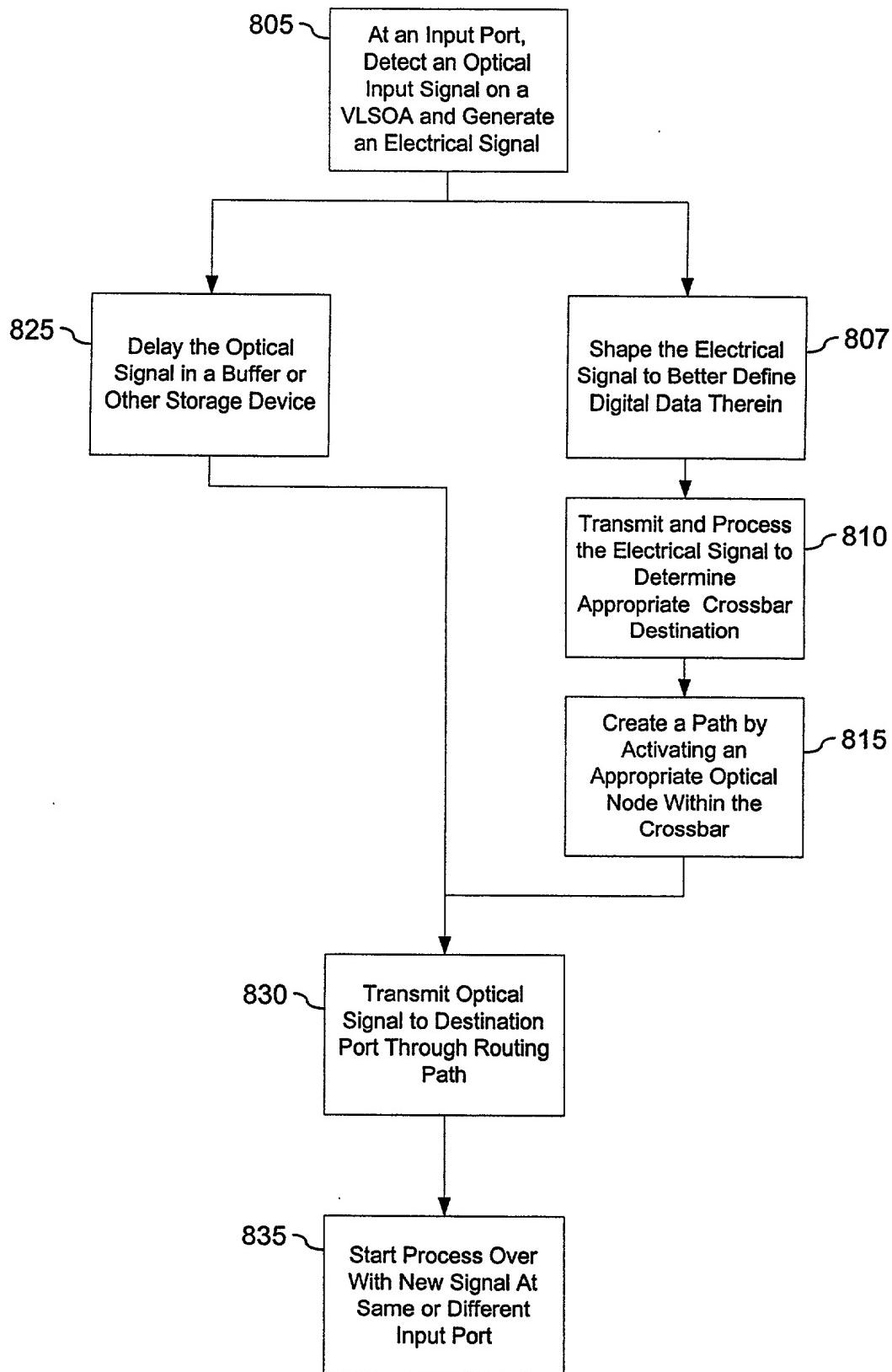


Figure 8